What is claimed:

1. **(Original)** A glass-ceramic rare earth doped fiber, said glass-ceramic fiber comprising a plurality of crystallites, wherein at least 90% of the rare earth dopant is situated within said crystallites.

2. **(Original)** The glass-ceramic rare earth doped fiber according to claim 1, wherein said crystallites are 1000-nm or smaller.

3. **(Original)** The glass-ceramic rare earth doped fiber according to claim 1, wherein said crystallites are 100nm or smaller.

4. **(Original)** The glass-ceramic rare earth doped fiber according to claim 1, wherein said crystallites are 10nm or smaller.

5. **(Original)** The glass-ceramic rare earth doped fiber according to claim 1, wherein stimulated emission and absorption line shapes of said glass-ceramic rare earth doped fiber are narrower than that stimulated emission and absorption profile of a precursor rare earth doped glass.

6. **(Previously Amended)** The glass-ceramic according to claim 1 wherein said rare earth dopant is Pr, Er, Tm, or Dy, where dopant level is greater than 100ppm.

7. **(Original)** An optical amplifier comprising:

(i) an input port ;

(ii) a length of glass-ceramic rare earth doped fiber, said glass-ceramic fiber being operatively coupled to said input port; said glass-ceramic fiber including a plurality of crystallites, wherein at least 90% of said rare earth dopant is situated within said crystallites;

(iii) at least one of optical pump coupled to said glass-ceramic rare earth doped fiber;

(iv) an output port providing an amplified optical signal; and

(v) at least one optical component situated between said input port and said output port.

8. **(Original)** The optical amplifier according to claim 1, wherein said rare earth dopant is Pr, Nd, Tm, or Dy, Er.

9. **(Original)** The optical amplifier according to claim 7, wherein said crystallites are 1000-nm or smaller.

10. **(Original)** The optical amplifier according to claim 7, wherein said crystallites are 100nm or smaller.

11. **(Original)** The optical amplifier according to claim 7, wherein at least 95% of said rare earth dopant is situated within said crystallites.

12. **(Original)** The optical amplifier according to claim 7, wherein essentially all rare earth dopant is the microcrystalline phase of said glass ceramic fiber, and essentially none of said rare earth dopant is present in a surrounding glass.

13. **(Original)** An amplifier according to claim 7, wherein said optical component is a filter, an optical attenuator, a multiplexer, or an isolator.

14. **(Previously Amended)** The optical amplifier according to claim 7, wherein stimulated emission profile of said glass ceramic fiber is narrower than that stimulated emission profile of a similarly rare-earth doped glass.

15. **(Original)** The optical amplifier according to claim 7, wherein stimulated emission profile of said glass ceramic fiber is narrower than that stimulated emission profile of a precursor rare earth doped glass.

16. **(Original)** The optical amplifier according to claim 7, wherein individual absorption peaks of the rare earth ions of said glass-ceramic fiber said amplifier providing gain in at least 1320 to 1360 nm range is narrower than that of the precursor rare earth doped glass.

17. **(Currently Amended)** The optical amplifier according to claim 7, wherein said rare earth dopant is Nd and said optical amplifier characterized by a shift in ESA spectrum in 1320 nm to 1360 nm wavelength range, with respect to emission of said rare earth doped glass-ceramic fiber.